TOROS ÜNİVERSİTESİ

Faculty Of Engıneerıng
Computer And Software Engıneerıng

Course Information

ADVANCED PROGRAMMING					
Code	**Semester**	**Theoretical**	**Practice**	**National Credit**	**ECTS Credit**
		Hour / Week			
CSE108	Spring	3	2	4	

Prerequisites and co-requisites	None
Language of instruction	English
Type	Required
Level of Course	Bachelor's
Lecturer	Asst. Prof. Furkan GÖZÜKARA
Mode of Delivery	Face to Face
Suggested Subject	None
Professional practise (internship)	None
Objectives of the Course	Advanced programming topics and object oriented programming in C# programming language
Contents of the Course	Essential concepts of object oriented programming, structures, classes, properties, methods, objects; Constructors, destructors, encapsulation, inheritance, polymorphism, operator overloading; Templates; Exceptions and exception handling; Dynamic memory allocation and management; Variable reference types; Threads, basics of threaded programming; Use of integrated development environments.

Learning Outcomes of Course

#	Learning Outcomes
1	Become familiar with the main concepts and processes of object oriented programming;
2	Composing classes and writing methods are understood in details and established with examples;
3	Where and how to use private, public, protected variables, classes, methods and static, dynamic object concepts are understood;
4	How to store data, update data and read data from database is learned at beginners level;
5	With threading and tasks, fundamentals of multi-core programming is learned;
6	By understanding in details how to use form structure, advanced interface and features having computer programs can be coded;

Course Syllabus

#	Subjects	Teaching Methods and Technics
1	Dictionary usage, writing to a file, reading from a file, using structure, foreach loops, data type conversation	Lecture
2	Dictionary usage, writing to a file, reading from a file, using structure, foreach loops, data type conversation	Lecture
3	Class writing and using, function writing and using, recursive function programming, using stopwatch to calculate time, string formatting	Lecture
4	Writing methods and classes with using constructors, constructor overloading, method overloading, static variables, static classes, static methods,	Lecture
5	Introduction to MSSQL database, writing SQL database queries, writing a database connection class, using C# grid structure to effectively update database	Lecture
6	Introduction to MSSQL database, writing SQL database queries, writing a database connection class, using C# grid structure to effectively update database	Lecture

7	Using form structure to start multiple different forms, using task structure to do multi-threading programming and preventing main screen (main thread) freeze	Lecture
8	Midterm Week - No Lesson	
9	Global static variable definition, using form structure and database to show different screens to different ranks, improving database class with parameterized queries to prevent SQL injection attacks, using parameterized queries	Lecture
10	Global static variable definition, using form structure and database to show different screens to different ranks, improving database class with parameterized queries to prevent SQL injection attacks, using parameterized queries	Lecture
11	Using complex class structures, methods, expected and unexpected error handlers, HtmlAgilityPack library from Nuget and other 3 party libraries to develop an advanced web crawler	Lecture
12	Using complex class structures, methods, expected and unexpected error handlers, HtmlAgilityPack library from Nuget and other 3 party libraries to develop an advanced web crawler, using XML and Json to save and read data	Lecture
13	Using complex class structures, methods, expected and unexpected error handlers, HtmlAgilityPack library from Nuget and other 3 party libraries to develop an advanced web crawler	Lecture
14	Class interfaces and class inheritance	Lecture
15		
16	Project Delivery	Exam

Course Syllabus

#	Material / Resources	Information About Resources	Reference / Recommended Resources
1	https://github.com/FurkanGozukara/Advanced-Programming-2019		

Method of Assessment

#	Weight	Work Type	Work Title
1	100%	Final Project	Final Project

Relationship between Learning Outcomes of Course and Program Outcomes

#	Learning Outcomes	Program Outcomes	Method of Assessment
1	Become familiar with the main concepts and processes of object oriented programming;	1	1
2	Composing classes and writing methods are understood in details and established with examples;	1	1
3	Where and how to use private, public, protected variables, classes, methods and static, dynamic object concepts are understood;	1	1
4	How to store data, update data and read data from database is learned at beginners level;	1	1
5	With threading and tasks, fundamentals of multi-core programming is learned;	1	1
6	By understanding in details how to use form structure, advanced interface and features having computer programs can be coded;	1	1

PS. The numbers, which are shown in the column Method of Assessment, presents the methods shown in the previous table, titled as Method of Assessment.

Work Load Details

#	Type of Work	Quantity	Time (Hour)	Work Load
1	Course Duration	14	5	70
2	Course Duration Except Class (Preliminary Study, Enhancement)	14	2	28
3	Presentation and Seminar Preparation	0	0	0
4	Web Research, Library and Archival Work	0	0	0
5	Document/Information Listing	0	0	0

6	Workshop	0	0	0
7	Preparation for Midterm Exam	1	3	3
8	Midterm Exam	1	3	3
9	Quiz	0	0	0
10	Homework	1	4	4
11	Midterm Project	0	0	0
12	Midterm Exercise	0	0	0
13	Final Project	0	0	0
14	Final Exercise	1	6	6
15	Preparation for Final Exam	1	5	5
16	Final Exam	1	1	1
				120